

PATENT

The Office Action states that there are 36 claims
REMARKS in the application. Applicants

Claims 1-43 are pending in the present application, of which claims 1, 17, 33 are independent. Claims 1-16 are cancelled, and Claims 17-42 are amended. After such amendments, Claims 17-43 are pending. Claims 17-43 of this patent application are in conformance with the corresponding claims 17-43 found to be allowable in the corresponding PCT filed Application. Applicants ~~respectfully~~ ^{pending} note that there are 43 claims ~~and not 36 as indicated by the Examiner~~. Applicants believe that the present application is in condition for allowance, which prompt and favorable action is respectfully requested.

I. REJECTION UNDER 35 U.S.C. §102

The Office Actions states that Claims 1-8, 10-24, and 26-36 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,650,902 issued to Richton (hereinafter "Richton"). The rejection is respectfully traversed in its entirety.

The communicate system for cellular communication networks provides communicates, constituting program content concurrently delivered in a single transmission to a plurality of subscribers who are equipped with wireless subscriber devices, with multiple subscribers sharing a single air interface channel, that extends from their communicate device to the upstream shared radio transmitter of the communication system that carries the communicate, to concurrently receive the multi-media content on the same channel. The communicate system creates the temporal and spatial extent of a communicate coverage area in the content domain with the subscribers being identified by the system and a population of these subscribers being selected to receive the communicate. The transmission of the communicate is real-time in nature, with multiple subscribers concurrently sharing a single channel to receive the multi-media content, such as streaming real-time video, delivered in a single transmission. The communicate coverage area can be dynamic and is modified to reflect changes in the location of the target audience. Independent claims 17, 33 define the basic communicate system architecture where multiple subscribers concurrently share a single channel.

It is important to begin the analysis of Applicant's claims and the prior art with a description of the basic characteristics of multicasting as it existed at the time of Applicant's

PATENT

invention. An excellent point of reference is the paper titled "Multicast For Mobility Protocol (MMP) For Emerging Internet Networks" by A. Mihailovic, M. Shabeer and A. H. Aghvami, published Sep. 2000, pages 327-333, in the Eleventh IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2000), London UK, (copy attached) which paper describes an improved protocol for multicasts.

The multicast protocol in existence at the time of Applicant's invention and at the time this paper was published, is a blind broadcast of a short burst of data to all members of a selected multicast group. Since the transmission is blind in nature, it requires the repeated transmission of the same short burst of data in encrypted form from a number of cell sites. The mobile stations that are members of the selected multicast group can decrypt the short burst of data because they are the only mobile stations that have the decryption key. Since there is no knowledge of whether each mobile station in the multicast group receives a particular instance of the transmitted short burst of data, the transmissions must be repeated, as described in the cited reference D1. The selection of the cell sites is determined as a function of the presence of a member of the selected multicast group in that cell site. The short burst of data is propagated from the source through data communication paths to each of the selected cell sites.

The propagation of the short burst of data is determined by a routing tree which defines the chain of all cell sites that must process the short burst of data in order to broadcast the short burst of data to all of the mobile stations that are members of the multicast group. The routing tree is updated every time a Registration Request is received from a newly connected mobile station or from a mobile station that relocates from one cell to another. Thus, the overhead entailed in maintaining a routing tree and the need to repeatedly broadcast the short burst of data makes multicasting a very inefficient form of data delivery and therefore pertinent to only a limited subset of data delivery instances.

The above-noted paper notes an improved protocol that divides the address space into global/local (also termed macro/micro) mobility. The problem addressed therein is described in the second column of page 327: "However, the general concept of Mobile IP, although providing a robust and simple solution, does not support seamless or near-seamless mobility, which is demanded for the new emerging generation of internet networks and relevant applications and services. This is due mainly to the inefficient location updating during handovers where mobile

PATENT

hosts are required to send new location updates to their Home Agents each time they change subnets/Foreign Agents." The proposed location updating is described on pages 329-330, where a Registration Request received from a newly connected mobile station is used to update the routing tree in a hierarchical manner. In the proposed protocol, the routing tree update is simplified over that traditionally used in multicasts, where the network updates the routing tree for every mobile station that registers with the network or that relocates from one cell to another.

Thus, the basic and immutable premise of multicast is that the members of the multicast group must all receive the multicast, and the cells in which these multicast group members are located can be identified, but the mobile stations are not concurrently receiving the multicast, so a repeated broadcast is required to ultimately reach all of the members of the multicast group.

Richton describes a telecommunications system that uses location information to initiate, point-to-point, the sending of location specific information to travelers, where the information has a relationship to its location. The movement of a wireless mobile unit is located and an incoming data stream of the user's location is maintained. At the direction of the user, certain location based information is retrieved and is sent back or continually sent to the wireless mobile unit. (See Col. 2, lines 41-58).

Thus, existing cellular communication networks, such as described by Richton, are designed with a network topology and service offerings that are point-to-point in nature. This paradigm represents the historical view of cellular communications as a wireless equivalent of traditional wire-line telephone communication networks, which serves to interconnect a calling party with a called party with a dedicated line in the form of the subscriber loop. The cellular communications network still uses the dedicated line in the form of a dedicated channel that extends from the base station to the subscriber's cellular telephone. The need to concurrently serve many voice subscribers with the limited bandwidth available in cellular communication networks has prevented the provision of wide bandwidth communication services to these subscribers. These existing systems are largely static in their operation, with each cell providing point-to-point communications to a population of subscribers who reside in or roam into the predefined service area of the cell. The innovations in this technology have been directed to adaptations of the point-to-point architecture to address the delivery of selected types of messages, such as customized advertisements, PUSH-based messages, and the like. The use of

PATENT

multicast represents a primitive attempt to propagate a short burst of data on a blind broadcast basis to a population of mobile stations who are members of a multicast group.

In contrast to these systems described in the cited references, Applicant's **communique** system for cellular communication networks provides communiques to only those subscribers who are located in a determined set of cells, with multiple subscribers sharing a single channel, that extends from their communique device to the upstream shared radio transmitter of the communication system that carries the Communique, to concurrently receive the multi-media content via the same link. The **communique** system creates the temporal and spatial extent of a **communique** service in the content domain and can include non-contiguous cells. The coverage area for this transmission (termed "narrowcast") can be dynamic and is modified to reflect changes in the location of the target audience. The **communique** system identifies the subscribers who are active in each cell site, determines whether a community of subscribers is present and then uses a content delivery algorithm to map the **Communique** to a set of cell sites that define the coverage area, which can include non-contiguous cells. The **communique** system then routes the **Communique** to the associated base stations for concurrent transmission to the subscribers via a single radio channel. The **Communique** can be unidirectional (broadcast) or bi-directional (interactive) in nature and the extent of the **Communique** is narrowcast, where one or more cells and/or cell sectors are grouped to cover a demographic population or subscriber interest group to transmit information to subscribers who populate the target audience for the **communique** transmissions, independent of the presence of subscribers who are authorized to receive said communique and who are served by other cells of said cellular communication network. The **communique** transmission is real-time in nature, with multiple subscribers concurrently sharing a single channel to receive the single transmission of the multi-media content, such as streaming real-time video.

II. REJECTION UNDER 35 U.S.C. §103

The Examiner rejected claims 9 and 25 under 35 U.S.C. §103 as being unpatentable over Richton in view of U.S. Patent No. 6,647,257 issued to Owensby (hereinafter "Owensby"). In light of the amendments to the claims and the comments above with respect to Richton, Claims 9 and 25 are allowable.

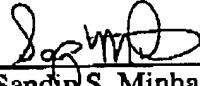
PATENT

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants submit that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

Dated: September 2, 2004

By: 
Sandip S. Minhas, Reg. No. 44,945
(858) 651-4908

QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, California 92121
Telephone: (858) 658-5787
Facsimile: (858) 658-2502